In the Claims

The following listing of claims will replace all previous listings of claims in the Application:

1-20 Canceled

21. (New) A timing circuit for a quantum key distribution system, comprising:

an optical receiver that generates an input clock signal having a frequency and a phase;

a receive time-domain (RTD) phase-lock loop (PLL) directly electrically connected to the optical receiver through a first switch in a first position of first and second switch positions, the RTD PLL having arranged in series a first phase comparator, a first low-pass filter (LPF) and a first voltage controlled oscillator (VCO) that outputs a RTD clock signal;

a transmit time-domain (TTD) PLL electrically connected to the optical receiver and to the RTD PLL when the first switch is in the second position, the TTD PLL having arranged in series a second phase comparator, a second LPF and a second VCO, with the second LPF and second VCO connected through a second switch at a first position of first and second switch positions, wherein the second VCO outputs a TTD clock signal; and

wherein, when the first switch is in the first position, the first phase comparator measures the RTD clock signal versus the input clock signal.

22. (New) The timing circuit of claim 21, wherein when the first switch is in the second position, the first phase comparator measures the RTD clock signal versus the TTD clock signal.

23. (New) The timing circuit of claim 21, wherein when the second switch is in the first position, the second phase comparator measures the TTD clock signal versus the input clock signal and the VCO adjusts the TTD clock signal to match the frequency and phase of the input clock signal.

24. (New) The timing circuit of claim 23, wherein when the second switch is in the second position, the second VCO generates a fixed-frequency TTD clock signal.

25. (New) The timing circuit of claim 21, wherein when the first and second switches are in their respective second positions, the timing circuit operates in an optical time domain reflectometry mode wherein delay times between events in a RTD and a TTD can be measured.